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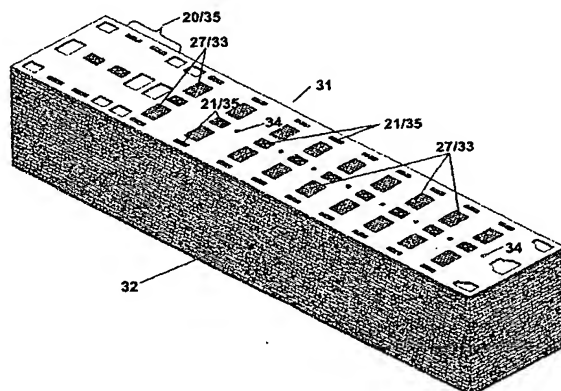
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(54) Title: CHEMICAL REACTOR



(57) Abstract: A chemical reactor is disclosed and which has a core composed of a stack of metal plates that are diffusion bonded in face-to-face relationship. A plurality of reaction zones are located within the core, as are a plurality of catalyst receiving zones, and both the reaction zones and the catalyst receiving zones are defined by respective aligned apertures in the plates. A first channel arrangement is provided in some of the plates for transporting a first reactant to and between the reaction zones, portions of the first channel arrangement that interconnect the reaction zones being formed over at least a portion of their length as heat exchange channels. A second channel arrangement is provided in others of the plates and is arranged to deliver a second reactant to each of the reaction zones. Also, a third channel arrangement provided in still others of the plates for transporting a third reactant to and between the catalyst receiving zones, portions of the third channel arrangement that interconnect the catalyst receiving zones being formed over at least a portion of their length as heat exchange channels that are positioned in heat exchange proximity to the heat exchange channels of the first channel arrangement. Also disclosed is a fuel processor that incorporates the chemical reactor, the catalyst receiving zones being arranged to function as reformer stages in the fuel processor.

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